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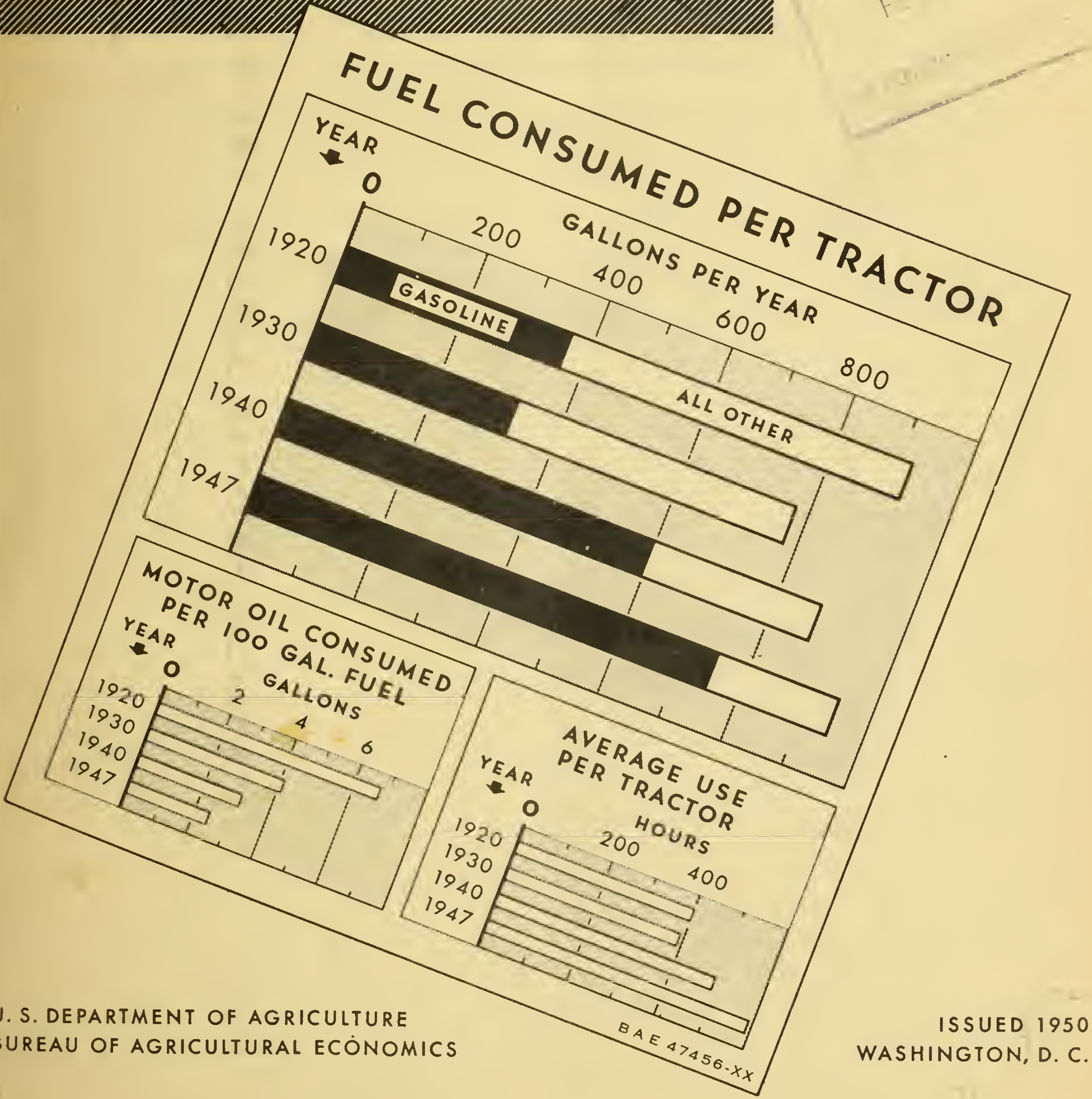
FUEL AND MOTOR OIL CONSUMPTION *and* ANNUAL USE OF FARM TRACTORS



U. S. DEPARTMENT OF AGRICULTURE
BUREAU OF AGRICULTURAL ECONOMICS

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BASIS OF ESTIMATES

The basic information for the year 1947 used in this report was supplied in February 1948 by about 19,000 voluntary crop reporters of the United States Department of Agriculture. They reported the quantity and kind of motor fuel and the quantity of motor oil used by their tractors in 1947. They supplied information also as to the make, model, year of manufacture, and hours of use in 1947, of each tractor on their farms on January 1, 1948. These crop correspondents reported also the size of their farms.

The estimate for January 1, 1948 of the number of tractors on farms by type, age, and size were developed from material supplied by the crop correspondents, from findings of the April 1948 enumerative survey of the Bureau, and from related data. Data from the 1945 Census of Agriculture showing numbers of tractors by type and by size of farm groups for each State were used for weighting purposes in developing the estimates concerning wheel and crawler tractors.

It is believed that the procedure followed in developing these estimates has removed a substantial part of the bias resulting from the larger-than-average size of farms included in the survey. Even so, estimates of tractors by States can be considered only as approximations. Considerable error could have been introduced in per-unit use or in the estimate of numbers of tractors on farms January 1, 1948.

On February 1948 crop correspondents also supplied information concerning annual use and consumption of liquid petroleum fuels and motor oil by automobiles and motortrucks, consumption of liquid petroleum fuels by stationary and mounted motors, and in the farm household, and for miscellaneous farm uses in 1947. The BAE report F. M. 73, "Farm Consumption of Liquid Petroleum Fuels and Motor Oil" contains the findings of the survey in regard to these uses, as well as estimates of hours of tractor use and consumption of tractor fuel and motor oil, and estimates by States of total farm consumption of liquid petroleum fuels and motor oil by principal uses.

The horsepower ratings of tractors in this report were taken from "Nebraska Tests" when available. The ratings used are from test B and test H for belt and draw-bar horsepower, respectively. These are the rated load tests. For tractors not tested at Nebraska, manufacturers' ratings were used when available. In some instances, however, it was necessary to estimate the tractor rating from manufacturers' specifications and from related data.

Wheel tractors, as used in this report, include all factory-made three-and four-wheel riding tractors of six and more draw-bar horsepower. Crawler tractors include all factory-made riding track-laying tractors. Of these tractors on farms January 1, 1948, none had a rating of less than 10 D.B. HP. Garden tractors include all tractors of less than 6 D.B. HP. The great bulk of these are of the walking type. Home-made tractors are riding tractors constructed or assembled from parts of discarded automobiles, motortrucks, tractors, etc. Practically all home-made tractors are wheel tractors; only a few home-made crawlers were reported.

CONSUMPTION OF FUEL AND MOTOR OIL AND ANNUAL USE OF FARM TRACTORS

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CONTENTS

	Page
Increasing use of farm tractors	1
Numbers of horses and mules decline	2
Importance of tractor power	2
Consumption of fuel by tractors	3
Consumption of motor oil	5
Annual use of farm tractors	5
Consumption of fuel per hour of tractor use	6

Estimates of annual use of tractors together with the quantity and kind of motor fuel and the amount of motor oil used per farm tractor in 1947 with comparisons for other years are presented in this report. Also for 1947 and 1940 estimates are presented on tractor performance by type, age and size of tractor as well as the influence in 1947 of size of farm on the performance of wheel and crawler tractors. Estimates of tractor performance for 1930 and for 1920 are averages for all tractors on farms, since no estimate of tractor use, consumption of fuel and motor oil by type, age, and size of tractor are available for years before 1940.

INCREASING USE OF FARM TRACTORS

The first large expansion in the use of machine power on farms followed immediately after World War I when farm incomes were at high levels, as were wage rates for farm labor and prices of feed. But the number of tractors on farms continued to increase in the 1920's, when prices of many farm products were relatively low in relation to prices of machinery and many other products bought by farmers. In 1930 there were more than 3½ times as many farm tractors as in 1920. Numbers of farm tractors changed very little during the depression years of the early thirties, but by 1940 the total of 1,545,000 farm tractors represented an increase of more than 65 percent over the 1930 numbers (table 1). Since 1940 the number of tractors has increased more rapidly than before and on January 1, 1949, farm tractors totaled 3,500,000. High farm incomes, high wage rates, high prices of feed in the last decade as in the World War I period have contributed to the rapid expansion of tractor use. Also, in recent years prices of farm machinery have been low in terms of pre-World-War II relationships to prices of farm products and to farm incomes.

Expansion in numbers of tractors was at first most pronounced in the small-grain areas which contain many large farms. After 1925, the general-purpose tractor began to be important and numbers of tractors increased markedly in the row-crop areas of the country, especially in the Corn Belt and the western cotton areas. Until recent years, the use of tractors had made little headway in the cotton areas east of the Mississippi River and in the Appalachian States. These areas continue to do more of the farm work with animal power than is done elsewhere. But increases in tractor numbers in these Southeastern States have been especially pronounced since 1940 (table 2).

NUMBERS OF HORSES AND MULES DECLINE

Along with the increase in tractor numbers a tremendous reduction has occurred in the total number of horses and mules and in numbers of work stock (animals 3 years old and over.) The number of work animals on farms on January 1, 1949, was only about 37 percent of the 1920 number and total numbers of horses and mules had declined even more (table 1). At the beginning of World War I the annual colt crop averaged about 2 million head. The 1948 colt crop was only 10 percent of this figure. A colt crop of this size would maintain a total horse and mule population of only about 3,500,000 head, compared with the 8,274,000 head on farms January 1, 1949.

IMPORTANCE OF TRACTOR POWER

The acreage of harvested cropland has been at about the same level in recent years as it was in 1920. Thus, work animals on farms January 1, 1949, were of sufficient number to provide as much power per 100 acres of cropland as was provided in 1920 for only about 37 percent of the present harvested acreage. But apparently work animals now provide power for substantially less than a third of the farm work that requires animal or tractor power. Since 1920, the amount of work performed annually per head of work stock has decreased markedly. On many farms with tractors, work animals are now sparingly used principally for light work during the rush season.

Less than 35 percent of the farms reported tractors in 1945 but in 1944 these tractor farms had about 74 percent of the total acreage of harvested cropland (table 3). Census reports show that about 27 percent of the farms had no tractors or work animals. However, many of these were share cropper farms for which tractor or animal power was furnished as needed by owners of the land. Other farms without tractors or work animals hired the power to perform work on their farms as needed.

Thus, in 1947 almost 9 percent of the total work of wheel tractors was work off the farm, as was about 14 percent of the work with crawler tractors (table 4). Large tractors were used to a greater extent for work off the farm than were small tractors. Custom or exchange work accounted for only about 3 percent of the total work of garden tractors. Much of the off-farm work for all tractors is done on other tractor farms but in many areas a great deal of this work is custom or exchange work on farms whose operators owned no tractors.

From 1945 to 1949 numbers of tractors on farms increased by about 1,080,000, or about 45 percent. The percentage increase in tractor farms since 1945 has been less than 30 percent. The tractor population of farms reporting tractors in 1945 has increased greatly. Farmers have found that more power contributes toward getting farm work done at the desired time, and thus means higher farm incomes. But the number of farms with tractors has increased greatly since 1945 and on January 1, 1949 about 2,600,000 farms had tractors. This is less than half the total number of farms in 1945. Farms with tractors January 1, 1949, probably had about 85 percent of the total acreage of crops harvested in 1948.

CONSUMPTION OF FUEL BY TRACTORS

In recent years tractors have become the largest single outlet on farms for liquid petroleum fuels. In 1947, of the approximately 7.5 billion gallons of liquid petroleum fuels used on farms for all purposes, consumption by tractors accounted for about 40 percent.

In 1948 consumption of motor fuel by farm tractors is estimated to have amounted to 3,280,000,000 gallons of a total of about 8,200,000,000 gallons for all farm uses, including household use. Consumption of motor fuel by tractors in 1949 is expected to show a substantial increase over the 1948 consumption because of further increase in numbers of farm tractors.

Early tractors had low-compression motors. They used large quantities of heavy fuels, especially kerosene. Thus, in 1920 only about 40 percent of the tractor fuel used was gasoline. With the advent of general-purpose tractors in the middle twenties, and with higher-compression motors, gasoline became more important as a tractor fuel. In the early thirties, with the introduction of pneumatic tires, tractor manufacturers increased production of high-compression motors. In 1940, gasoline comprised about 69 percent of tractor fuel (table 5). Kerosene, a leading tractor fuel in 1920, accounted for only about 6 percent of the tractor fuel used in 1940 and all other fuels for 25 percent. Since 1940, the use of gasoline as tractor fuel has continued to increase and in 1947 almost 80 percent of the tractor fuel used was gasoline (table 5). Most of the new tractors made from 1940 to 1947 were equipped with high-compression motors. Also, in the last decade, many low-compression motors on old-model tractors have been converted to high-compression motors and now use gasoline. In 1947 fuel for all tractors was made up of about 80 percent gasoline, 4 percent diesel fuel, 6 percent distillate, 3 percent kerosene, and all other fuels 7 percent (tables 5 and 6).

The kind of motor fuel used by tractors varies in different States. It is influenced primarily by State taxes and rebates on gasoline and by type of farm tractor. In 1947, in every State, a higher percentage of the tractor fuel was gasoline than was the case in 1940 (table 5). In 4 States - Louisiana, Arkansas, Nebraska, and Tennessee - less than 40 percent of the 1947 tractor fuel was gasoline. Use of gasoline as tractor fuel was relatively more important in the Northeastern States and in Ohio, where it accounted for more than 90 percent of the tractor fuel used.

The kind of fuel used also varies with different types of tractors. For wheel tractors, about 82 percent was gasoline with only 1 percent diesel fuel (table 8). For crawler tractors more than half was diesel fuel with only 46 percent gasoline (table 9). Practically all of the fuel used by home-made and garden tractors in 1947 was gasoline. Together, garden and home-made tractors comprised about 9 percent of the tractors on farms January 1, 1948, and in 1947 they used less than 1 percent of the total tractor fuel.

Age of tractor also influences the kind of tractor fuel. For wheel tractors, gasoline is a more important fuel for new tractors than for old (table 12). For crawler tractors 10 years of age and less, diesel fuel leads. For crawlers more than 10 years of age, gasoline is the leading fuel (table 13).

Also for crawler tractors the kind of fuel used varies significantly with the size of farm and size of tractor. On large farms the crawler tractors used are above average in size and a high proportion of diesel fuel is used (table 11).

CONSUMPTION OF MOTOR OIL

In 1947 tractors used an average of about 23 gallons of motor oil each or a total of about 73 million gallons. Consumption of motor oils per 100 gallons of tractor fuel averaged 2.44 gallons. Since 1920, consumption of motor oil per 100 gallons of tractor fuel has declined continuously. In 1947, tractors used only 36 percent as much motor oil per 100 gallons of fuel as in 1920 and substantially less than in other years since 1920 (table 5). Contributing to the saving in motor oil has been the increasing use of gasoline as a tractor fuel, along with other changes, and especially improved motors for tractors, increased use of filters, etc. With gasoline and other high volatile fuels there is less dilution of oil and less frequent changes than with the low volatile fuels.

Consumption of motor oil per 100 gallons of motor fuels varies somewhat with type of tractor. It was less for wheel tractors than for other types (table 8). Home-made tractors used more oil per 100 gallons of fuel than did others (table 9). Age of tractor also influences consumption of motor oil. For both wheel and crawler tractors, consumption of oil per 100 gallons of fuel increased as the age of the tractor increased (tables 12 and 13).

ANNUAL USE OF FARM TRACTORS

Before 1925, farm tractors were used almost exclusively for heavy-duty field work, such as plowing, disking, and harvesting of small-grain crops, and for belt work. Production of tractors adapted to light work like cultivating and the planting of row crops began to be important in the late twenties. It was greatly accelerated in the early thirties when low-pressure pneumatic tractor tires came into use. The modern tractor is adapted to many more jobs than were the older tractors. Its higher rate of travel speed, use of low-pressure pneumatic tires, lights, starter, power take-off, and hydraulic attachments, and the development of new machines adapted to more efficient use with tractors have increased the number of jobs for which tractors are adapted and the number of days of tractor use per year.

Tractors were used an average of about 400 hours each in 1920 and in 1930. By 1940 they were used almost 500 hours and in 1947 this had increased to 592 hours. Thus, since 1920, annual use per tractor has increased about 50 percent (table 5). The increase in recent years reflects the increased use of wheel tractors. In 1947 these tractors were used an average of 634 hours per tractor and in 1940, 488 hours. Average use of crawler tractors was 663 hours in 1947 and 671 hours in 1940, whereas home-made tractors were used 248 hours in 1940 and only 190 hours in 1947. In 1947 garden tractors were used an average of 120 hours. Relatively few of these tractors were on farms in 1941 and no estimate of annual use is available for 1940.

Annual use of tractors varies widely with the age of the tractor. Both wheel and crawler tractors in the younger age groups were used more hours in 1947 and in 1940 than were the older tractors, but the influence of age on annual use was less pronounced for crawlers than for wheel tractors (tables 12, 13 and 15).

Often old tractors are found on farms where one or more newer tractors are in use. The old tractors are used mostly during the rush season, for a specific job like grinding feed, or for other belt work. Sometimes an old tractor is bought by an operator of a small farm. For both wheel and crawler tractors, annual use and size of tractor is above average on large farms (tables 10 and 11).

The larger wheel and crawler tractors were used more hours in 1940 and in 1947 than were the smaller tractors. Large tractors are found principally on large farms where more work is available per tractor per year than on the small farms.

CONSUMPTION OF FUEL PER HOUR OF TRACTOR USE

Since 1920 the quantity of fuel consumed per hour of tractor use has continuously decreased. The increasing use of tractors for light duty jobs and improvements in tractor motors have contributed to this end.

Wheel tractors used an average of 1.76 gallons per hour of tractor use in 1940 and 1.60 gallons in 1947. Crawlers used 2.49 gallons per hour of use in 1940 and 2.13 gallons in 1947 (tables 14 and 15). Home-made tractors used 1.19 gallons per hour of use in 1940 and 1 gallon in 1947. For garden tractors consumption averaged about 0.2 gallon per hour of tractor use in 1947.

Principally reflecting larger tractors, fuel consumption per hour of use of wheel and crawler tractors increased as the size of farm increased (tables 10 and 11).

Belt horsepower ratings for wheel tractors of the different age groups differed very little but consumption of fuel per hour of use was considerably less for tractors 10 years old and less than for the older age group (table 12). For crawler tractors on farms January 1, 1948, fuel consumption per hour of use was below average for tractors 10 years old and less, although tractors in this age group were slightly larger than were the older tractors.

Table 1.- Number of tractors and horses and mules on farms January 1
United States, specified years

Item	1920	1930	1940	1945	1948 1/	1949 1/
	Thousands	Thousands	Thousands	Thousands	Thousands	Thousands
Tractors, exclusive of steam:						
Wheel	---	---	---	2,188	2,750	3,040
Crawler	---	---	---	99	124	133
Home-made	---	---	---	67	76	77
Garden	---	---	---	68	200	250
Total	246	920	1,545	2,422	3,150	3,500
Horses and mules:						
Under 1 year of age	1,606	574	754	400	229	200
3 years old and over	20,300	17,330	12,209	10,598	8,352	7,600
All ages	25,742	19,124	14,478	11,950	9,130	8,274

1/ Preliminary estimates.

Table 2.- Tractors on farms by States and State groups, specified years

State and group	Tractors on farms 1/					Percentage of 1948 farm tractors			
	1920 Census	1930 Census	1940 Census	1945 Census	Est. Jan. 1, 1948	Wheel	Crawler	Home-made	Garden
	Thousands	Thousands	Thousands	Thousands	Thousands	Percent	Percent	Percent	Percent
New England	2.3	14.1	28.4	54.0	72.1	57.8	4.2	15.1	22.9
New York	7.5	40.4	58.9	93.3	119.1	78.1	3.9	6.3	11.7
New Jersey	.9	8.1	12.9	19.8	26.6	67.7	4.9	5.2	22.2
Pennsylvania	5.7	33.5	54.8	92.6	127.4	78.5	4.1	5.6	11.8
Delaware	.2	1.6	2.7	4.6	5.6	89.3	1.8	----	8.9
Maryland	1.5	7.2	10.3	18.8	24.6	86.6	3.7	3.6	6.1
Northeast	18.1	104.9	168.0	283.1	375.4	74.3	4.0	7.5	14.2
Ohio	10.5	53.0	90.0	130.5	177.6	84.4	1.4	2.9	11.3
Indiana	9.2	42.0	73.2	105.3	132.5	92.1	.8	1.1	6.0
Illinois	23.1	69.6	126.1	174.3	209.0	94.8	1.4	.2	3.6
Iowa	20.3	66.2	128.5	181.0	226.2	97.2	.6	.4	1.8
Missouri	7.9	25.0	45.2	76.1	98.2	92.7	1.2	2.0	4.1
Corn Belt	71.0	255.8	463.0	667.2	843.5	92.6	1.1	1.2	5.1
Michigan	5.9	34.6	66.5	110.1	151.6	81.1	2.8	5.5	10.6
Wisconsin	9.4	50.2	81.2	123.3	154.2	90.8	1.2	4.1	3.9
Minnesota	15.5	48.5	105.1	152.6	185.5	92.7	1.2	2.9	3.2
Lake States	30.8	133.3	252.8	386.0	491.3	88.5	1.7	4.1	5.7
North Dakota	13.0	37.6	49.4	74.0	92.1	97.7	1.3	.2	.8
South Dakota	12.9	33.8	44.2	62.8	78.5	98.1	.9	.2	.8
Nebraska	11.1	40.7	70.8	96.2	123.9	97.7	.8	.3	1.2
Kansas	17.2	66.3	95.1	116.6	138.2	95.5	2.5	.6	1.4
Great Plains	54.2	178.4	259.5	349.6	432.7	97.1	1.4	.4	1.1
West Virginia	.6	2.8	3.7	6.8	10.7	65.4	4.7	8.4	21.5
Kentucky	2.0	7.3	11.9	24.4	33.7	89.0	2.1	2.1	6.8
Tennessee	1.9	6.9	11.8	24.1	32.5	92.3	2.2	1.2	4.3
Virginia	2.4	9.8	12.0	23.4	34.7	77.8	3.5	2.3	16.4
North Carolina	2.3	11.4	12.8	31.2	43.2	88.0	3.2	4.2	4.6
Appalachian	9.2	38.2	52.2	109.9	154.8	85.3	2.9	3.0	8.8
South Carolina	1.3	3.5	4.8	12.4	19.3	88.1	4.2	1.0	6.7
Georgia	2.3	5.9	9.3	24.6	38.9	88.7	3.1	.5	7.7
Florida	.7	5.2	7.7	12.8	20.6	60.7	10.2	5.8	23.3
Alabama	.8	4.7	7.6	17.1	27.2	90.1	4.0	.4	5.5
Southeast	5.1	19.3	29.4	66.9	106.0	83.5	4.9	1.6	10.0

- Continued -

Table 2.- Tractors on farms by States and State groups, specified years-Cont'd

State and group	Tractors on farms 1/					Percentage of 1948 farm tractors			
	1920 Census	1930 Census	1940 Census	1945 Census	Est. Jan 1, 1948	Wheel	Crawler	Home-made	Garden
	Thousands	Thousands	Thousands	Thousands	Thousands	Percent	Percent	Percent	Percent
Mississippi	0.7	5.5	10.6	21.1	31.4	89.2	3.8	0.3	6.7
Louisiana	2.8	5.0	9.5	17.6	27.1	90.4	3.3	.4	5.9
Arkansas	1.8	5.7	12.6	26.5	39.4	93.9	1.8	.5	3.8
Delta	5.3	16.2	32.7	65.2	97.9	91.4	2.9	.4	5.3
Oklahoma	6.2	26.0	45.4	70.4	87.8	95.7	1.3	.4	2.6
Texas	9.0	37.3	98.9	162.4	205.3	95.5	2.1	.5	1.9
Okla.-Texas	15.2	63.3	144.3	232.8	293.1	95.5	1.8	.5	2.2
Montana	7.6	19.0	22.6	31.7	40.7	90.9	6.6	.8	1.7
Idaho	1.6	4.7	11.1	20.3	29.1	75.6	18.9	2.1	3.4
Wyoming	1.1	4.1	6.5	9.9	13.1	91.6	5.3	.8	2.3
Colorado	5.0	13.3	21.4	32.8	41.2	87.4	7.8	1.9	2.9
New Mexico	.5	2.5	5.8	10.7	14.8	94.6	2.7	.7	2.0
Arizona	.9	2.6	4.1	6.4	9.6	83.3	11.5	1.0	4.2
Utah	.6	1.4	3.0	6.9	11.2	80.4	9.8	.9	8.9
Nevada	.2	.4	.7	1.8	2.3	87.0	13.0	---	---
Mountain	17.5	48.0	75.2	120.5	162.0	86.4	9.3	1.2	3.1
Washington	2.6	8.4	18.0	32.1	44.6	48.2	24.7	6.9	20.2
Oregon	3.1	44.4	55.2	28.6	40.7	62.6	16.0	4.2	17.2
California	13.9	9.8	17.1	79.8	108.0	53.7	32.4	1.4	12.5
Pacific	19.6	62.6	90.3	140.5	193.3	54.3	27.2	3.2	15.3
United States	246.0	920.0	1,567.4	2,421.7	3,150.0	87.3	3.9	2.4	6.4

1/ Does not include steam tractors. For 1940, the estimate of numbers of farm tractors for January 1 was 1,545,000. For all other years, the January 1 estimates are the same as in the above table.

Table 3.- Percentage distribution of farms, cropland harvested, horses and mules, and tractors, by kinds of power for field work, United States, 1945 1/

Item	Percentage distribution of farms with -				
	No tractors			Tractors	
	No work animals	One horse or mule	Two or more horses and/or mules	Horses and/or mules	No horses or mules
	Percent	Percent	Percent	Percent	Percent
Farms	26.8	10.9	27.9	24.9	9.5
Cropland harvested	6.3	2.7	17.2	58.0	15.8
Horses and mules	--	5.5	46.1	48.4	--
Tractors	--	--	--	72.3	27.7

1/ From Bureau of the Census report, Farm Work Power. Reports of the 1945 Census show a total of 5,859,169 farms; 2,421,747 tractors; 11,628,794 horses and mules; and 352,865,765 acres of harvested cropland.

Table 4.- Percentage distribution of tractor work by type and size of tractor, United States, 1947

Size of tractor (Draw-bar horse-power)	Distribution of tractor work					
	Wheel		Crawler		Garden	
	On farm	Off farm	On farm	Off farm	On farm	Off farm
	Percent	Percent	Percent	Percent	Percent	Percent
Less than 12	92.4	7.6	97.2	2.8	--	--
12 - 18.4	91.4	8.6	90.7	9.3	--	--
18.5 - 24.9	91.1	8.9	82.9	17.1	--	--
25.0 and over	90.2	9.8	84.4	15.6	--	--
All sizes	91.4	8.6	86.2	13.8	96.6	3.4

Table 5.- Average time used and consumption of fuel and motor oil, per farm tractor, United States, specified years

Year	Average time used per tractor	Motor fuel consumed per tractor: Gasoline	Kerosene	All other	Total	Per hour of use	Motor oil consumed: Per tractor	Per 100 gallons of motor fuel
	Hours	Gallons	Gallons	Gallons	Gallons	Gallons	Gallons	Gallons
1920 1/	400	368	2/	552	920	2.30	62.0	6.74
1930 1/	390	328	2/	452	780	2.00	32.0	4.10
1940 3/	493	600	52	217	869	1.76	27.0	3.11
1947 3/	592	753	26	167	946	1.60	23.1	2.44

1/ Based on average number of tractors at beginning and at end of year.

2/ Included with all other fuels. But kerosene was an important tractor fuel in these years.

3/ Based on number of tractors, January 1, following year.

Table 6.- Percentage distribution of motor fuel consumed per farm tractor, by kind, by States, 1940 and 1947

State and group	Consumption of tractor fuel									
	1940				1947					
	Average per tractor	Percentage distribution			Average per tractor	Percentage distribution				
		Gaso-line	Kero-sene	All other		Gaso-line	Diesel fuel	Distil-late	Kero-sene	All other
	Gal.	Pct.	Pct.	Pct.	Gal.	Pct.	Pct.	Pct.	Pct.	Pct.
New England	475	77.1	18.9	4.0	437	91.1	1.6	0.9	5.9	0.5
New York	685	86.0	9.0	5.0	616	96.4	.5	--	2.8	.3
New Jersey	795	91.0	5.0	4.0	640	96.4	--	.3	3.3	--
Pennsylvania	475	48.0	30.1	21.9	676	87.7	1.2	1.9	7.6	1.6
Delaware	790	93.0	--	7.0	767	99.7	--	--	.3	--
Maryland	670	91.1	4.0	4.9	777	98.2	--	.6	1.2	---
Northeast	590	72.9	16.8	10.3	617	92.5	.8	1.0	4.9	.8
Ohio	600	84.0	8.0	8.0	632	92.4	2.2	2.8	2.1	.5
Indiana	725	74.9	6.1	19.0	811	88.7	1.0	4.2	.7	5.4
Illinois	860	73.0	5.0	22.0	1,115	89.1	1.4	4.2	1.3	4.0
Iowa	800	72.0	2.0	26.0	1,029	87.0	1.1	6.3	.5	5.1
Missouri	750	74.0	8.9	17.1	920	84.1	1.7	5.0	1.4	7.8
Corn Belt	754	75.0	5.0	20.0	920	88.3	1.4	4.8	1.1	4.4
Michigan	610	72.0	1.0	27.0	664	85.7	3.1	4.4	.6	6.2
Wisconsin	530	74.9	6.0	19.1	718	89.8	1.3	4.5	.8	3.6
Minnesota	865	68.0	2.0	30.0	1,042	80.8	1.9	7.3	.6	9.4
Lake States	690	70.0	3.0	27.0	824	84.5	2.1	5.8	.6	7.0
North Dakota	1,160	78.0	--	22.0	1,402	80.8	2.3	8.4	.4	8.1
South Dakota	975	64.0	3.0	33.0	1,260	83.1	2.9	4.1	1.6	8.3
Nebraska	900	10.0	15.0	75.0	1,073	38.8	2.4	8.5	1.2	49.1
Kansas	1,450	81.0	1.0	18.0	1,449	84.4	2.8	4.1	1.0	7.7
Great Plains	1,166	63.0	4.0	33.0	1,297	72.6	2.6	6.1	1.0	17.7
West Virginia	425	72.9	27.1	--	410	93.6	3.7	.2	1.0	1.5
Kentucky	600	22.0	56.0	22.0	726	66.5	1.4	7.7	20.1	4.3
Tennessee	625	9.0	40.0	51.0	747	39.8	2.5	27.3	22.2	8.2
Virginia	660	81.1	5.9	13.0	678	89.5	2.1	3.5	4.3	.6
North Carolina	500	64.0	30.0	6.0	757	80.4	1.8	1.5	14.8	1.5
Appalachian	581	46.6	32.4	21.0	707	70.7	2.0	9.1	14.8	3.4
South Carolina	625	12.0	73.9	14.1	817	65.7	2.1	16.0	4.3	11.9
Georgia	625	17.9	6.1	76.0	808	72.3	3.1	19.9	.4	4.3
Florida	625	27.0	8.0	65.0	614	58.3	13.4	21.0	4.8	2.5
Alabama	670	9.0	40.0	51.0	841	48.6	3.3	32.5	1.7	13.9
Southeast	636	17.0	26.4	56.6	780	62.4	4.5	22.8	2.2	8.1

- Continued -

Table 6.- Percentage distribution of motor fuel consumed per farm tractor, by kind, by States, 1940 and 1947 - Continued

State and group	Consumption of tractor fuel									
	1940				1947					
	Average per tractor	Percentage distribution			Average per tractor	Percentage distribution				
		Gasoline	Kerosene	All other		Gasoline	Diesel fuel	Distillate	Kerosene	All other
	Gal.	Pct.	Pct.	Pct.	Gal.	Pct.	Pct.	Pct.	Pct.	Pct.
Mississippi	750	9.1	24.9	66.0	852	56.4	5.3	19.7	5.9	12.7
Louisiana	1,025	4.0	18.0	78.0	1,171	21.6	4.1	45.5	5.0	23.8
Arkansas	1,100	2.0	33.0	65.0	880	22.3	3.5	62.5	2.5	9.2
Delta	966	4.9	26.0	69.1	951	31.9	4.2	44.5	4.3	15.1
Oklahoma	1,160	80.0	16.0	4.0	1,260	85.5	1.9	.9	11.0	.7
Texas	1,175	82.0	10.0	8.0	1,253	89.1	3.0	.8	6.5	.6
Okla.-Texas	1,169	82.0	11.0	7.0	1,255	88.0	2.7	.8	7.9	.6
Montana	1,150	48.0	1.0	51.0	1,322	69.9	8.4	18.3	.1	3.3
Idaho	825	68.0	--	32.0	803	73.2	21.6	3.5	.2	1.5
Wyoming	850	14.0	12.9	73.1	855	42.2	8.6	27.0	3.4	18.8
Colorado	1,050	72.0	1.0	27.0	1,218	78.5	5.6	9.7	2.0	4.2
New Mexico	1,100	82.0	3.0	15.0	1,047	89.3	3.9	.7	6.0	.1
Arizona	1,350	62.0	--	38.0	1,307	66.4	17.8	3.7	1.0	11.1
Utah	800	38.0	2.0	60.0	784	63.0	14.4	19.5	1.3	1.8
Nevada	800	38.0	2.0	60.0	926	83.3	16.3	.1	--	.3
Mountain	1,025	59.0	2.0	39.0	1,096	72.3	10.0	11.8	1.4	4.5
Washington	1,045	48.0	3.0	49.0	765	54.3	41.4	.7	.1	3.5
Oregon	960	53.9	2.0	44.1	780	65.2	25.3	3.1	.1	6.3
California	1,330	60.0	--	40.0	1,024	67.2	29.4	1.0	.8	1.6
Pacific	1,196	57.0	1.0	42.0	913	64.3	31.0	1.3	.5	2.9
United States	869	69.0	6.0	25.0	946	79.6	4.3	6.4	2.8	6.9

Table 7.- Tractors on farms January 1, 1948, and consumption of motor fuel and motor oil per tractor, by States, 1947

State and group	Tractors		Consumption per tractor in 1947						
			Motor fuel						Motor oil
	On farms Jan. 1, 1948	Average annual use in 1947	Gasoline	Diesel fuel	Distillate	Kerosene	Other	Total	
	Number	Hours	Gal.	Gal.	Gal.	Gal.	Gal.	Gal.	Gal.
New England	72,125	355	398	7	4	26	2	437	11
New York	119,100	447	594	3	-	17	2	616	16
New Jersey	26,600	499	617	-	2	21	-	640	18
Pennsylvania	127,450	496	593	8	13	51	11	676	18
Delaware	5,575	552	765	-	-	2	-	767	20
Maryland	24,600	547	763	-	5	9	-	777	18
Northeast	375,450	458	571	5	6	30	5	617	16.0
Ohio	177,600	446	584	14	18	13	3	632	15
Indiana	132,500	542	719	8	34	6	44	811	19
Illinois	208,950	656	993	15	47	15	45	1,115	28
Iowa	226,250	638	895	11	65	5	53	1,029	24
Missouri	98,200	626	774	15	46	13	72	920	21
Corn Belt	843,500	585	812	13	44	10	41	920	21.8
Michigan	151,600	485	569	21	29	4	41	664	17
Wisconsin	154,200	481	645	9	32	6	26	718	18
Minnesota	185,500	657	842	20	76	6	98	1,042	24
Lake States	491,300	549	696	17	48	5	58	824	19.8
North Dakota	92,100	753	1,133	32	117	6	114	1,402	34
South Dakota	78,500	782	1,047	37	52	20	104	1,260	30
Nebraska	123,900	651	416	26	91	13	527	1,073	28
Kansas	138,200	686	1,222	41	59	15	112	1,449	35
Great Plains	432,700	708	941	34	79	13	230	1,297	31.9
West Virginia	10,650	351	384	15	1	4	6	410	10
Kentucky	33,725	508	483	10	56	146	31	726	17
Tennessee	32,525	523	297	19	204	166	61	747	18
Virginia	34,700	482	607	14	24	29	4	678	17
North Carolina	43,200	526	609	14	11	112	11	757	19
Appalachian	154,800	500	500	14	64	105	24	707	17.4
South Carolina	19,325	536	537	17	131	35	97	817	20
Georgia	38,900	575	584	25	161	3	35	808	20
Florida	20,550	497	358	82	129	30	15	614	16
Alabama	27,175	614	409	28	273	14	117	841	21
Southeast	105,950	563	487	35	178	17	63	780	19.5

- Continued -

Table 7.- Tractors on farms January 1, 1948, and consumption of motor fuel and motor oil per tractor, by States, 1947 - Continued

State and group	Tractors		Consumption per tractor in 1947						
	On farms Jan. 1, 1948	Average annual use in 1947	Motor fuel						Motor oil
			Gasoline	Diesel fuel	Distillate	Kerosene	Other	Total	
	Number	Hours	Gal.	Gal.	Gal.	Gal.	Gal.	Gal.	Gal.
Mississippi	31,450	528	481	45	168	50	108	852	20
Louisiana	27,125	659	253	48	533	59	278	1,171	28
Arkansas	39,375	579	196	31	550	22	81	880	21
Delta	97,950	585	303	40	423	41	144	951	22.8
Oklahoma	87,800	677	1,077	24	11	139	9	1,260	31
Texas	205,300	783	1,116	38	10	82	7	1,253	31
Okla.-Texas	293,100	751	1,104	34	10	99	8	1,255	31.0
Montana	40,700	656	924	111	242	2	43	1,322	32
Idaho	29,100	489	588	173	28	2	12	803	20
Wyoming	13,075	563	361	73	231	29	161	855	22
Colorado	41,200	711	956	68	118	24	52	1,218	26
New Mexico	14,775	647	935	41	7	63	1	1,047	24
Arizona	9,550	812	868	232	49	13	145	1,307	29
Utah	11,200	521	494	113	153	10	14	784	22
Nevada	2,350	594	771	151	1	-	3	926	21
Mountain	161,950	631	792	110	129	16	49	1,096	25.7
Washington	44,600	496	415	317	5	1	27	765	20
Oregon	40,700	485	509	197	24	1	49	780	20
California	108,000	596	688	301	10	8	17	1,024	26
Pacific	193,300	550	587	283	12	5	26	913	23.4
United States	3,150,000	592	753	41	61	26	65	946	23.1

Table 8.- Wheel tractors on farms, January 1, 1948, and consumption of motor fuel and motor oil per tractor, by States, 1947 1/

State and group	Wheel tractors on farms, Jan. 1, 1948			Average per tractor in 1947							
		Average size			Motor fuel						
	Total	Drawbar	Belt	Time used	Gasoline	Diesel fuel	Distillate	Kerosene	Other	Total	Motor oil
	Thous.	H.P.	H.P.	Hours	Gal.	Gal.	Gal.	Gal.	Gal.	Gal.	Gal.
New England	41.7	13.4	19.0	480	585	4	7	45	3	644	16
New York	93	15.7	21.7	520	710	4	-	22	2	738	19
New Jersey	18	14.4	20.7	640	825	-	3	30	-	858	24
Pennsylvania	100	16.0	22.1	585	710	10	16	64	13	813	21
Delaware	5	14.5	19.8	600	843	-	-	2	-	845	22
Maryland	21.3	15.2	21.6	600	850	-	-	10	-	860	20
Northeast	279	15.3	21.3	553	712	6	7	40	6	771	19.7
Ohio	150	15.4	21.8	500	669	12	21	15	3	720	17
Indiana	122	16.1	22.7	575	771	7	37	7	48	870	20
Illinois	198	17.1	24.1	680	1,035	12	50	16	47	1,160	29
Iowa	220	16.3	22.9	650	914	10	67	5	54	1,050	24
Missouri	91	15.3	21.4	660	820	13	50	14	78	975	22
Corn Belt	781	16.2	22.8	618	864	11	47	11	44	977	23.1
Michigan	123	14.6	20.4	550	667	12	36	5	50	770	19
Wisconsin	140	16.1	21.6	510	695	5	35	7	28	770	19
Minnesota	172	16.5	23.1	690	895	11	82	6	106	1,100	25
Lake States	435	15.8	21.9	592	766	9	54	6	65	900	21.4
North Dakota	90	19.0	26.7	760	1,147	21	119	6	117	1,410	34
South Dakota	77	16.8	23.6	790	1,062	29	53	20	106	1,270	30
Nebraska	121	16.7	23.8	660	422	21	93	13	536	1,085	28
Kansas	132	18.5	26.8	700	1,264	17	61	16	117	1,475	36
Great Plains	420	17.8	25.3	718	959	21	81	14	236	1,311	32.2
West Virginia	70	13.7	19.8	450	531	-	-	6	8	545	13
Kentucky	30	15.1	21.4	550	529	4	63	164	35	795	19
Tennessee	30	15.5	21.3	550	310	13	221	180	66	790	19
Virginia	27	14.9	20.3	575	754	4	30	37	5	830	21
North Carolina	38	15.7	21.6	570	670	4	12	127	12	825	20
Appalachian	132	15.2	21.1	556	566	6	74	123	28	797	19.4
South Carolina	17	15.3	21.4	580	588	4	148	40	110	890	22
Georgia	34.5	14.7	20.0	625	642	17	181	3	39	882	22
Florida	12.5	13.2	18.7	625	470	18	212	50	24	774	19
Alabama	24.5	15.0	20.2	650	434	8	303	15	130	890	22
Southeast	88.5	14.7	20.1	623	550	12	213	20	76	871	21.6
Mississippi	28	15.2	21.3	559	517	20	189	56	121	903	21
Louisiana	24.5	17.8	24.6	700	260	27	590	65	308	1,250	30
Arkansas	37	17.3	23.3	600	198	20	585	23	86	912	22
Delta	89.5	16.8	23.0	615	315	22	462	45	158	1,002	23.9

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Table 8.- Wheel tractors on farms, January 1, 1948, and consumption of motor fuel and motor oil per tractor, by States, 1947 1/ - Continued

State and group	Wheel tractors on farms, Jan. 1, 1948: Total	Average size: Drawbar	Average size: Belt	Average per tractor in 1947: Time used	Motor fuel: Gasoline	Motor fuel: Diesel fuel	Motor fuel: Distillate	Motor fuel: Kerosene	Motor fuel: Other	Motor fuel: Total	Motor oil
	Thous.	H.P.	H.P.	Hours	Gal.	Gal.	Gal.	Gal.	Gal.	Gal.	Gal.
Oklahoma	84	17.5	24.5	695	1,111	16	11	145	9	1,292	32
Texas	196	16.5	22.9	800	1,150	14	10	86	7	1,267	31
Okla.-Texas	280	16.8	23.4	768	1,138	15	10	104	8	1,275	31.3
Montana	37	19.6	28.1	660	976	24	261	2	47	1,310	31
Idaho	22	16.8	23.2	475	650	13	31	2	14	710	17
Wyoming	12	16.6	23.4	575	370	38	248	32	171	859	22
Colorado	36	17.6	25.0	745	1,016	37	135	28	60	1,276	27
New Mexico	14	17.0	24.2	660	966	20	7	66	1	1,060	24
Arizona	8	15.3	21.4	810	923	57	31	16	173	1,200	25
Utah	9	15.8	22.0	550	538	6	190	12	18	764	21
Nevada	2	15.3	19.6	590	788	40	-	-	-	828	18
Mountain	140	17.6	24.8	646	845	27	144	19	56	1,091	25.1
Washington	21.5	13.2	18.6	500	592	19	10	1	54	676	16
Oregon	25.5	14.0	19.6	525	659	21	21	1	76	778	19
California	58.0	13.8	19.8	585	769	18	15	15	20	837	21
Pacific	105	13.7	19.5	553	706	19	15	9	41	790	19.5
United States	2,750	16.3	22.8	634	827	13	69	30	74	1,013	24.5

1/ Does not include garden or home-made tractors.

Table 9.- Crawler, home-made, and garden tractors on farms, January 1, 1948 and consumption of motor fuel and motor oil per tractor, by State groups, 1947

State group	Tractors on farms, January 1, 1948: Total	Average size: Drawbar	Average size: Belt	Average per tractor - 1947: Time used	Motor fuel: Gasoline	Motor fuel: Diesel fuel	Motor fuel: Other	Motor fuel: Total	Motor oil
	Thous.	H.P.	H.P.	Hours	Gal.	Gal.	Gal.	Gal.	Gal.
				CRAWLER					
Mountain	15	24.3	32.9	724	605	927	45	1,577	41
Pacific	52.5	26.4	35.2	794	699	1,004	28	1,731	46
Other	56.5	20.5	28.6	525	616	435	20	1,071	29
United States	124	23.5	31.9	663	650	735	27	1,412	37.6
				HOME-MADE					
United States	76	--	--	190	186	--	4	190	7.2
				GARDEN					
United States	200	--	--	120	24	--	1	25	1.0

Table 10.- Consumption of motor fuel and motor oil, annual use and average size of wheel tractors by size of farm and by State groups

State group	Size of farm	Average size of tractors on farms Jan. 1, 1948		Average per tractor in 1947			Fuel per hour of tractor use	Motor oil per 100 gallons of motor fuel
		Draw-bar	Belt	Time used	Motor fuel	Motor oil		
	Acres	H.P.	H.P.	Hours	Gal.	Gal.	Gal.	Gal.
Northeast	Under 50	13.0	18.4	370	475	11.6	1.28	2.44
	50 - 99.9	14.8	20.9	525	670	17.5	1.28	2.61
	100 - 179.9	15.5	21.6	580	815	21.3	1.41	2.61
	180 - 259.9	16.7	22.7	610	905	23.0	1.48	2.54
	260 - 499.9	16.6	22.8	675	990	24.3	1.47	2.45
	500 and over	16.4	22.3	715	1,140	30.6	1.59	2.68
	Average	15.3	21.3	553	771	19.7	1.39	2.56
Corn Belt	Under 50	12.5	17.8	360	460	11.0	1.28	2.39
	50 - 99.9	14.0	20.3	430	570	14.5	1.33	2.54
	100 - 179.9	15.6	22.2	550	850	21.0	1.55	2.47
	180 - 259.9	17.0	23.7	700	1,110	25.5	1.59	2.30
	260 - 499.9	18.0	24.9	760	1,290	30.0	1.70	2.33
	500 and over	19.0	26.1	890	1,590	36.6	1.79	2.30
	Average	16.2	22.8	618	977	23.1	1.58	2.36
Lake States	Under 50	13.2	18.4	360	465	12.5	1.29	2.69
	50 - 99.9	14.0	20.2	465	625	15.6	1.34	2.50
	100 - 179.9	15.6	21.4	550	825	19.7	1.50	2.39
	180 - 259.9	17.0	23.0	680	1,065	25.0	1.57	2.35
	260 - 499.9	17.6	24.2	760	1,215	27.0	1.60	2.22
	500 and over	19.0	26.0	800	1,530	36.9	1.91	2.41
	Average	15.8	21.9	592	900	21.4	1.52	2.38
Great Plains	Under 50	10.0	16.5	525	505	14.0	.96	2.77
	50 - 99.9	14.2	21.7	485	660	17.0	1.36	2.58
	100 - 179.9	15.3	22.4	555	845	21.6	1.52	2.56
	180 - 259.9	16.1	23.2	690	1,090	27.0	1.58	2.48
	260 - 499.9	17.8	25.4	750	1,300	31.0	1.73	2.38
	500 and over	20.2	28.1	800	1,670	39.7	2.09	2.38
	Average	17.8	25.3	718	1,311	32.2	1.83	2.46
Appalachian 1/	Under 50	13.9	19.0	380	445	1/	1.17	1/
	50 - 99.9	14.0	19.4	445	585	---	1.31	---
	100 - 179.9	14.3	20.2	490	650	---	1.33	---
	180 - 259.9	15.6	21.9	635	900	---	1.42	---
	260 - 499.9	16.8	23.2	715	1,100	---	1.54	---
	500 and over	18.8	25.4	855	1.465	---	1.71	---
	Average	15.2	21.1	556	797	19.4	1.43	2.42
Southeast 1/	Under 50	11.6	16.6	230	260	1/	1.13	1/
	50 - 99.9	13.2	18.0	360	400	---	1.11	---
	100 - 179.9	13.9	19.0	560	665	---	1.19	---
	180 - 259.9	15.0	20.3	650	840	---	1.29	---
	260 - 499.9	14.9	20.3	700	910	---	1.30	---
	500 and over	17.8	24.2	1,015	1,745	---	1.72	---
	Average	14.7	20.1	623	871	21.6	1.40	2.48

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Table 10.- Consumption of motor fuel and motor oil, annual use and average size of wheel tractors by size of farm and by State groups - Cont'd.

State group	Size of farm	Average size of tractors on farms Jan. 1, 1948: Draw-bar		Average per tractor in 1947: Time used			Fuel per hour of tractor use	Motor oil per 100 gallons of motor fuel
		Draw-bar	Belt	Time used	Motor fuel	Motor oil		
	Acres	H.P.	H.P.	Hours	Gal.	Gal.	Gal.	Gal.
Delta States 1/	Under 50	13.0	18.3	300	360	1/	1.20	1/
	50 - 99.9	14.6	19.4	470	625	---	1.33	---
	100 - 179.9	14.5	20.4	640	900	---	1.41	---
	180 - 259.9	15.4	21.2	520	750	---	1.44	---
	260 - 499.9	17.3	23.8	615	1,100	---	1.79	---
	500 and over	20.0	27.3	780	1,430	---	1.83	---
	Average	16.8	23.0	615	1,002	23.9	1.63	2.39
Okla.-Texas 1/	Under 50	13.1	18.1	375	475	1/	1.27	1/
	50 - 99.9	12.6	17.5	590	640	---	1.08	---
	100 - 179.9	14.7	21.0	690	960	---	1.39	---
	180 - 259.9	15.6	21.9	860	1,275	---	1.48	---
	260 - 499.9	17.4	24.3	840	1,480	---	1.76	---
	500 and over	20.8	28.9	845	1,720	---	2.04	---
	Average	16.8	23.4	768	1,275	31.3	1.66	2.45
Mountain	Under 50	12.0	18.6	375	455	12.8	1.21	2.81
	50 - 99.9	15.3	20.6	570	700	17.0	1.23	2.43
	100 - 179.9	15.6	21.7	610	820	20.5	1.34	2.50
	180 - 259.9	16.2	23.0	615	900	23.3	1.46	2.59
	260 - 499.9	17.8	25.1	660	1,050	25.7	1.59	2.45
	500 and over	19.8	28.2	710	1,360	31.7	1.92	2.33
	Average	17.6	24.8	646	1,091	25.1	1.69	2.30
Pacific	Under 50	12.0	17.8	450	550	13.4	1.22	2.44
	50 - 99.9	12.9	18.8	560	810	20.0	1.45	2.47
	100 - 179.9	13.9	19.6	550	850	20.0	1.55	2.35
	180 - 259.9	13.7	19.7	630	950	24.0	1.51	2.53
	260 - 499.9	15.0	20.8	630	960	22.0	1.52	2.29
	500 and over	17.2	22.9	660	1,055	27.4	1.60	2.69
	Average	13.7	19.5	553	790	19.5	1.43	2.47
United States	Under 50	12.6	18.1	380	465	12.4	1.22	2.67
	50 - 99.9	14.0	20.0	490	630	17.3	1.29	2.75
	100 - 179.9	15.3	21.6	565	830	21.4	1.47	2.58
	180 - 259.9	16.5	23.0	680	1,045	25.4	1.54	2.43
	260 - 499.9	17.5	24.5	750	1,245	28.9	1.66	2.32
	500 and over	18.9	27.3	810	1,620	36.3	2.00	2.24
	Average	16.3	22.8	634	1,013	24.5	1.60	2.42

1/ Consumption of motor oil by size of farm groups not available.

Table 11.- Consumption of motor fuel and motor oil, annual use and average size of crawler tractors by size of farm, United States

Size of farm	Average size of tractors on farms Jan. 1, 1948		Average per tractor in 1947						Fuel per hour of tractor use	Motor oil per 100 gallons of motor fuel
			Time used	Motor fuel				Motor oil		
	Draw-bar	Belt		Gaso-line	Diesel	All other	Total			
	H.P.	H.P.	Hours	Gal.	Gal.	Gal.	Gal.	Gal.	Gal.	Gal.
Under 50 acres	17.1	23.6	445	643	102	-	745	20.0	1.67	2.68
50 - 99	18.6	25.2	490	660	215	8	883	24.0	1.80	2.72
100 -179	18.9	25.5	500	635	195	80	910	26.4	1.82	2.90
180 -259	21.0	30.1	600	730	380	16	1,126	32.5	1.88	2.89
260 -499	23.7	31.9	620	845	436	34	1,315	33.5	2.12	2.55
500 -999	27.8	37.5	730	600	1,064	20	1,684	41.6	2.31	2.47
1,000 and over	33.0	42.9	1,050	500	2,070	30	2,600	68.0	2.48	2.62
All farms	23.5	31.9	663	650	735	27	1,412	37.6	2.13	2.66

Table 12.- Annual use, consumption of fuel, and average size of wheel tractors by age of tractor and by State groups

Age of tractor Jan. 1, 1948 1/	Wheel tractors on farms Jan. 1, 1948: Total	Wheel tractors on farms Jan. 1, 1948: Average size: Draw-bar	Wheel tractors on farms Jan. 1, 1948: Average size: Belt	Average per tractor in 1947: Time used	Average per tractor in 1947: Motor fuel: Gasoline	Average per tractor in 1947: Motor fuel: Diesel fuel	Average per tractor in 1947: Motor fuel: Distillate	Average per tractor in 1947: Motor fuel: Kerosene	Average per tractor in 1947: Motor fuel: Other	Average per tractor in 1947: Motor fuel: Total	Average per tractor in 1947: Motor oil
	Thous.	H.P.	H.P.	Hrs.	Gal.	Gal.	Gal.	Gal.	Gal.	Gal.	Gal.
					NORTHEAST						
10 yrs. & less	210	16.0	21.2	590	743	7	5	33	6	793	19.7
10.1 to 20 yrs	57	13.7	21.6	490	690	4	15	67	7	783	21.0
Over 20 yrs.	12	11.2	20.7	210	275	-	-	26	8	309	12.5
All ages	279	15.3	21.3	553	712	6	7	40	6	771	19.7
					CORN BELT						
10 yrs. & less	530	17.0	22.8	663	900	12	41	8	43	1,004	22.6
10.1 to 20 yrs	231	14.6	22.8	540	812	11	61	18	48	950	24.6
Over 20 yrs.	20	14.0	24.8	325	511	-	38	19	31	599	18.8
All ages	781	16.2	22.8	618	864	11	47	11	44	977	23.1
					LAKE STATES						
10 yrs. & less	309	16.3	21.5	635	820	8	50	5	56	939	21.3
10.1 to 20 yrs	108	14.6	22.7	527	690	12	68	4	90	864	22.9
Over 20 yrs.	18	13.5	23.7	242	310	11	35	29	59	444	15.4
All ages	435	15.8	21.9	592	766	9	54	6	65	900	21.4
					GREAT PLAINS						
10 yrs. & less	261	19.0	25.3	790	1,063	28	79	9	232	1,411	32.9
10.1 to 20 yrs	145	15.8	25.1	625	818	10	89	22	252	1,191	31.9
Over 20 yrs.	14	15.8	27.0	345	465	19	33	22	137	676	22.6
All ages	420	17.8	25.3	718	959	21	81	14	236	1,311	32.2
					APPALACHIAN						
10 yrs. & less	105	15.7	21.0	602	640	7	77	93	28	845	20.0
10.1 to 20 yrs	20	13.9	22.0	438	320	-	75	282	37	714	19.2
Over 20 yrs.	7	11.3	20.7	208	155	-	29	116	3	303	10.8
All ages	132	15.2	21.1	556	566	6	74	123	28	797	19.4
					SOUTHEAST						
10 yrs. & less	76.5	14.9	19.8	656	590	14	221	17	58	900	21.9
10.1 to 20 yrs	9	14.0	21.7	507	380	3	202	19	237	841	23.1
Over 20 yrs.	3	12.0	22.6	133	50	-	39	91	59	239	9.5
All ages	88.5	14.7	20.1	623	550	12	213	20	76	871	21.6

- Continued -

Table 12.- Annual use, consumption of fuel, and average size of wheel tractors by age of tractor and by State groups - Cont'd.

Age of tractor Jan. 1, 1948 1/	Wheel tractors on farms Jan. 1, 1948: Total	Average size: Drawbar	Average size: Belt	Average per tractor in 1947: Time used	Motor fuel: Gasoline	Motor fuel: Diesel fuel	Motor fuel: Distillate	Motor fuel: Kerosene	Motor fuel: Other	Motor fuel: Total	Motor oil
	Thous.	H.P.	H.P.	Hrs.	Gal.	Gal.	Gal.	Gal.	Gal.	Gal.	Gal.
					DELTA STATES						
10 yrs. & less	70.5	17.1	22.7	650	340	26	471	31	146	1,014	23.5
10.1 to 20 yrs	17	16.0	24.3	526	240	8	460	100	225	1,033	27.5
Over 20 yrs.	2	11.7	20.8	133	80	-	145	64	1	290	8.8
All ages	89.5	16.8	23.0	615	315	22	462	45	158	1,002	23.9
					OKLAHOMA-TEXAS						
10 yrs. & less	189	17.3	23.1	830	1,183	22	12	100	10	1,327	31.4
10.1 to 20 yrs	86	15.7	23.9	661	1,072	-	5	118	5	1,200	31.9
Over 20 yrs.	5	15.0	26.4	289	559	-	-	4	-	563	15.5
All ages	280	16.8	23.4	768	1,138	15	10	104	8	1,275	31.3
					MOUNTAIN						
10 yrs. & less	97	18.2	24.2	692	877	33	139	18	56	1,123	24.8
10.1 to 20 yrs	38	16.6	26.3	580	837	16	167	23	55	1,098	26.9
Over 20 yrs.	5	14.5	25.0	267	300	4	66	3	75	448	17.4
All ages	140	17.6	24.8	646	845	27	144	19	56	1,091	25.1
					PACIFIC						
10 yrs. & less	77	14.2	19.4	588	749	10	10	-	33	802	19.2
10.1 to 20 yrs	22	12.9	20.4	534	704	57	9	41	79	890	23.2
Over 20 yrs.	6	10.6	18.1	173	161	1	96	-	12	270	9.2
All ages	105	13.7	19.5	553	706	19	15	9	41	790	19.5
					UNITED STATES						
10 yrs. & less	1,925	16.9	22.5	676	866	15	69	26	68	1,044	24.3
10.1 to 20 yrs	733	15.0	23.4	570	784	10	72	42	94	1,002	26.4
Over 20 yrs.	92	13.3	23.6	270	349	5	37	28	49	468	16.1
All ages	2,750	16.3	22.8	634	827	13	69	30	74	1,013	24.5

1/ Ten years and less group includes 1938-47 tractors; over 10 years including 20 year group includes 1928-37 tractors, and over 20 years includes tractors made in 1927 and earlier years.

Table 13.- Annual use, consumption of fuel, and average size of crawler tractors by age of tractor and by State groups

Age of tractor January 1, 1948	Number of tractors Jan. 1, 1948	Average size of tractors on farms Jan. 1, 1948		Average per tractor in 1947					
				Time used	Motor fuel				Motor oil
		Draw-bar	Belt		Gasoline	Diesel	All other	Total	
	Thous.	H.P.	H.P.	Hours	Gal.	Gal.	Gal.	Gal.	Gal.
				MOUNTAIN STATES					
10 yrs. & less	9.0	25.7	34.8	820	536	1,162	63	1,761	45
11-20 yrs.	5.0	21.7	29.4	630	718	690	15	1,423	38
Over 20 years	1.0	25.3	33.0	340	657	---	39	696	24
Total	15.0	24.3	32.9	724	605	927	45	1,577	41
				PACIFIC COAST STATES					
10 yrs. & less	28.8	28.3	37.8	840	510	1,211	19	1,740	46
11-20 yrs.	20.0	24.2	32.5	800	908	891	25	1,824	49
Over 20 years	3.7	22.9	29.2	410	1,040	---	102	1,142	31
Total	52.5	26.4	35.2	794	699	1,004	28	1,731	46
				ALL OTHER STATES					
10 yrs. & less	36.2	20.7	29.0	579	551	553	21	1,125	29
11-20 yrs.	17.5	21.2	29.1	466	800	261	16	1,077	31
Over 20 years	2.8	14.8	20.7	193	308	---	28	336	12
Total	56.5	20.5	28.6	525	616	435	20	1,071	29
				UNITED STATES					
10 yrs. & less	74.0	24.3	33.1	710	533	883	26	1,442	37.6
11-20 yrs.	42.5	22.7	30.7	642	841	608	19	1,469	40.3
Over 20 years	7.5	20.2	26.5	320	716	---	66	782	23.0
Total	124.0	23.5	31.9	663	650	735	27	1,412	37.6

Table 14.- Annual use, fuel consumed, by age and size, wheel and crawler tractors, United States, 1947

Size of tractor (drawbar horsepower)	Tractors on farms, January 1, 1948						Average per tractor in 1947			
	Number		Size of tractor				Time used		Fuel per hour of tractor use	
			Wheel		Crawler					
	Wheel	Crawler	Draw-bar	Belt	Draw-bar	Belt	Wheel tractor	Crawler tractor	Wheel tractor	Crawler tractor
	Thous.	Thous.	H.P.	H.P.	H.P.	H.P.	Hours	Hours	Gal.	Gal.
	10 years and less (1938-47)									
Less than 12	180	8.0	10.1	14.2	10.1	15.9	585	459	1.15	1.29
12 - 18.4	920	7.0	13.8	19.2	15.3	22.2	630	600	1.35	1.53
18.5 - 24.9	585	23.0	19.7	25.3	19.0	26.7	738	591	1.67	1.71
25 and over	240	36.0	27.5	34.8	32.4	43.2	768	863	2.25	2.49
All sizes	1,925	74.0	17.0	22.5	24.2	33.1	676	710	1.54	2.03
	Over 10 years including 20 years (1928-37)									
Less than 12	288	3.0	10.1	17.4	10.0	15.0	500	476	1.47	1.59
12 - 18.4	285	10.0	16.0	24.3	15.8	21.9	613	460	1.81	1.91
18.5 - 24.9	140	11.0	21.5	31.8	19.9	27.5	621	593	2.10	2.13
25 and over	20	18.5	27.4	39.4	30.7	40.5	596	797	2.78	2.70
All sizes	733	42.5	15.0	23.4	22.9	31.0	573	642	1.76	2.29
	Over 20 years (1927 and earlier)									
Less than 12	63	1.0	10.5	20.0	10.4	16.1	267	320	1.55	1.55
12 - 18.4	14	3.0	16.0	26.8	14.9	19.6	241	244	1.87	2.25
18.5 - 24.9	14	1.5	22.1	34.8	23.3	28.4	339	375	2.30	2.52
25 and over	1	2.0	31.1	50.0	30.6	37.3	205	394	2.98	3.11
All sizes	92	7.5	13.3	23.6	20.1	25.6	273	320	1.73	2.44
	All ages									
Less than 12	531	12.0	10.1	16.6	10.1	15.7	506	452	1.37	1.39
12 - 18.4	1,219	20.0	14.3	20.5	15.5	21.7	622	477	1.46	1.83
18.5 - 24.9	739	35.5	20.1	26.7	19.5	27.0	708	582	1.76	1.87
25 and over	261	56.5	27.5	35.2	31.7	42.1	752	825	2.29	2.58
All sizes	2,750	124.0	16.3	22.8	23.5	31.9	634	663	1.60	2.13

Table 15.- Annual use and fuel consumed, by age and size, wheel and crawler tractors, United States, 1940

Size of tractor (drawbar horsepower)	Tractors on farms Jan. 1, 1941		Average per tractor in 1940			
			Time used		Fuel per hour of tractor use	
	Wheel	Crawler	Wheel	Crawler	Wheel	Crawler
	Thous.	Thous.	Hours	Hours	Gal.	Gal.
			Less than 5 years (1936-40)			
Less than 12	242	1	474	292	1.28	1.60
12 - 18.4	347	6	565	626	1.57	2.15
18.5 - 24.9	205	18	607	689	1.96	2.50
25 and over	44	23	724	926	2.46	2.70
All sizes	838	48	557	780	1.65	2.50
			5 to 9 years (1931-35)			
Less than 12	100	2	444	383	1.45	1.60
12 - 18.4	76	3	542	498	1.79	2.09
18.5 - 24.9	72	6	626	477	2.13	2.35
25 and over	7	6	615	960	2.80	2.90
All sizes	255	17	527	650	1.80	2.48
			10 to 14 years (1926-30)			
Less than 12	178	2	328	280	1.64	1.64
12 - 18.4	95	3	463	466	2.10	2.07
18.5 - 24.9	80	2	363	213	2.62	2.40
25 and over	9	6	593	619	3.09	2.80
All sizes	362	13	375	448	1.96	2.51
			15 years and over (1925 and earlier)			
Less than 12	76	1	195	213	1.64	1.60
12 - 13.4	13	1	236	283	2.09	2.00
18.5 - 24.9	7	1	256	428	2.78	2.24
25 and over	3	2	238	310	3.20	3.06
All sizes	99	5	206	314	1.82	2.41
			All ages			
Less than 12	596	6	391	305	1.46	1.61
12 - 18.4	531	13	535	533	1.71	2.11
18.5 - 24.9	364	27	550	597	2.15	2.45
25 and over	63	37	670	848	2.62	2.77
All sizes	1,554	83	488	671	1.76	2.49

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